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Hypoxylon from China – 2: *H. dengii* sp. nov. and *H. crocopeplum* new to China

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Abstract—*Hypoxylon dengii* (*Xylariales*, *Xylariaceae*) is described from China as a new species, and *H. crocopeplum* is reported for the first time from the Chinese Mainland. The morphological descriptions and photographs of stromata and microstructures are provided based on the Chinese collections.

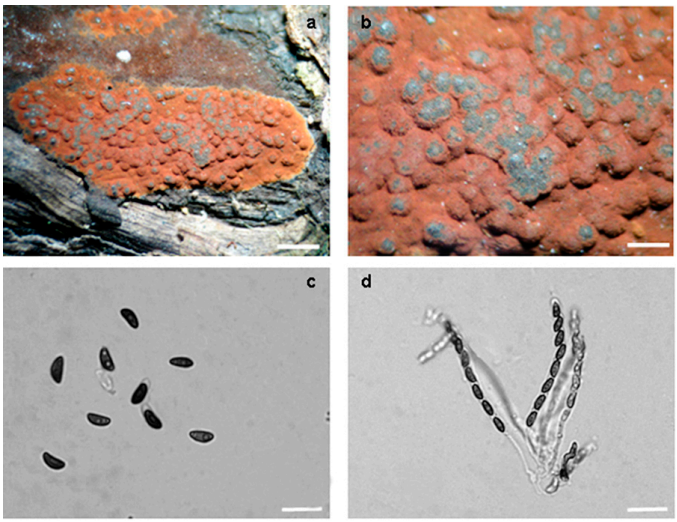
Key words—*Ascomycota*, pyrenomycetous fungi, taxonomy

Introduction

The members of the genus *Hypoxylon* are important components of forest ecosystems, where they grow on wood and decompose woody structures (Merrill et al. 1964, Rajagopalan 1966, Rogers 1979, Sutherland & Crawford 1981, Whalley 1985, Chapela & Boddy 1988, Wei et al. 1992). Publications dealing with descriptions and illustrations of *Hypoxylon* species from China are scanty (Teng 1963, Tai 1979, Abe & Liu 1995). A further study of this genus has yielded one species new to science and another new to the Chinese Mainland. Illustrated descriptions of these two species are provided in this paper.

Materials & methods

The studied specimens are deposited at the Herbarium of Mycology of Jilin Agricultural University (HMJAU). Microscopic features and measurements were made from slide preparations mounted in water, 10% KOH, and Melzer's iodine reagent. The photographs of asci, ascal apical ring, and ascospores were taken by using a VHX-600E microscope of the Keyence Corporation. The photographs of stromatal surface were taken with a ZSA30w microscope and S70 Canon camera. External stromatal colors were recorded and coded according to Rayner (1970). The methods of collecting, preservation, and identification of the examined specimens follow Ju & Rogers (1996).



Pl. 1 *Hypoxylon dengii*: a. Stromata; b. Stromatal surface; c. Ascospores; d. Asci. Scale bars: a = 0.5 mm, b = 0.2 mm, c = 15 μm, d = 20 μm.

Taxonomy

Hypoxylon dengii H.X. Ma, Lar.N. Vassiljeva & Yu Li, **sp. nov.** Pl. 1.

MycoBank MB 563782

Differs from *Hypoxylon jecorinum* by its larger ascospores and straight germ slit and from *H. crocopeplum* by its usually indehiscent perispore, smaller ascospores, and straight germ slit.

Type: China, Guangdong Province, Chebaling Nature Reserve, on the bark of a fallen branch, 26 June 2010, He S.-H. (**Holotype**, HMJAU 22432).

Etymology: The species is named in honor of Prof. Shu-Qun Deng, the first Chinese mycologist, who reported *Hypoxylon* from China.

Stromata effused-pulvinate, plane, with conspicuous perithecial mounds, 0.5–1 mm thick; surface yellow brown to rust, orange granules immediately beneath surface and between perithecia, with KOH-extractable pigments orange to scarlet; the tissue below the perithecial layer black, inconspicuous. Perithecia ovoid to short tubular, 0.1–0.3 × 0.2–0.6 mm; ostioles lower than the stromatal surface. Asci 65–80 × 5.5–7 μm long in the spore-bearing portions, the stipes 28.5–58.5 μm long, with apical ring bluing in Melzer's iodine reagent, discoid, 0.5–1 μm high × 1–1.5 μm broad. Ascospores brown to dark brown, unicellular, ellipsoid-inequilateral, with narrowly to broadly rounded ends, (10–)10.5–11.5(–12.5) × 5–6.5 μm, with straight germ slit slightly less than spore length; perispore infrequently dehiscent in 10% KOH.

Additional specimen examined: **China**, **Yunnan Province**, Kunming, on the bark of a fallen branch, 2 September 2010, Ma H.-X. (HMJAU 22624).

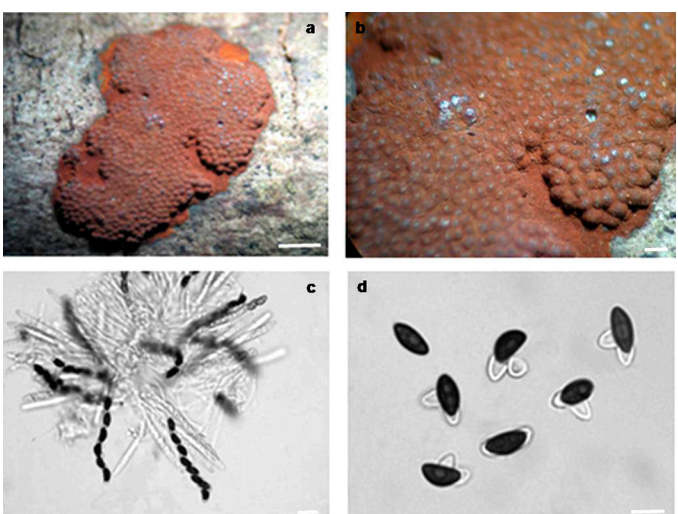
Comments — *Hypoxylon dengii* differs from *H. jecorinum* Berk. & Ravenel, which has smaller ascospores (8–9.5 × 4–5 μm) and a straight or slightly sigmoid germ slit (Ju & Rogers 1996).

Another similar species, *H. crocopeplum*, is distinguished by the dehiscence of almost every ascospore in 10% KOH, a larger ascospore size (see below), and a straight or slightly sigmoid germ slit.

In stromatal morphology and KOH-extractable pigments, *H. dengii* is also resembles *H. subcrocopeplum* Y.M. Ju & J.D. Rogers, which has longer narrower spores (11–15 × 4.5–5.5 μm) and an indehiscent perispore (Ju & Rogers 1996).

Hypoxylon crocopeplum Berk. & M.A. Curtis, Grevillea 4: 49. 1875. Pl. 2.

Stromata effused-pulvinate, plane, with conspicuous perithecial mounds, 0.4–2.5 cm long × 0.2–1.5 cm broad × 0.5–1 mm thick; surface yellow brown to rust, orange-red granules immediately beneath surface and between perithecia, with orange KOH-extractable pigments; the tissue below the perithecial layer black, inconspicuous. Perithecia ovoid, 0.1–0.3 × 0.2–0.5 mm; ostioles lower than the stromatal surface. Asci 77–95 × 8–10 μm long in the spore-bearing parts, the stipes 55–70 μm long, with apical ring bluing in Melzer's iodine reagent, discoid, 0.5–0.8 μm high × 0.8–1.5 μm broad. Ascospores brown to dark brown, unicellular, ellipsoid-inequilateral, with broadly rounded ends, (11.5–)12–14(–14.5) × 6–7.5 μm, with straight or sigmoid germ slit spore-length; perispore dehiscent in 10% KOH.



Pl. 2 *Hypoxylon crocopeplum*: a. Stromata; b. Stromatal surface; c. Asci; d. Ascospores. Scale bars: a = 4 mm, b = 1 mm, c = 15 μm, d = 10 μm.

Specimens Examined: **China**, **Guangzhou Province**, Chebaling Nature Reserve, on the bark of a fallen branch, 26 June 2010, Ma H.-X. (HMJAU 20215); **Yunnan Province**, Mengla County, on the bark of a fallen branch, 14 August 1994, Liu P.-G. (HKAS 28660).

Comments — *Hypoxylon crocopeplum* is widely distributed in the tropics and subtropics and has been reported in many areas including Africa, Australia, Brazil, India, Mexico, U.S.A, Thailand, and Taiwan. Our collections match the eastern North American type in thin stromata with inconspicuous black basal tissue and conspicuous perithecial mounds. Miller (1961) and Ju & Rogers (1996) considered some *H. crocopeplum* specimens to have thicker stromata with tubular to long tubular perithecia and a conspicuous black basal tissue beneath the perithecial layer, while Hsieh et al. (2005) felt that such specimens represented *H. polyporoideum* Berk. ex Cooke.

Hypoxylon crocopeplum somewhat resembles *H. cinnabarinum* (Henn.) Y.M. Ju & J.D. Rogers in stromatal morphology and *H. subcrocopeplum* in stromatal morphology and KOH-extractable pigments. However, *H. cinnabarinum* has nearly equilateral ascospores and a perispore that is usually indehiscent in 10% KOH (Ju & Rogers 1996), and *H. subcrocopeplum* ascospores are indehiscent. *Hypoxylon crocopeplum* is also somewhat similar to *H. jecorinum*, which has smaller ascospores 8–9.5(–11) × 4–5 µm.

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